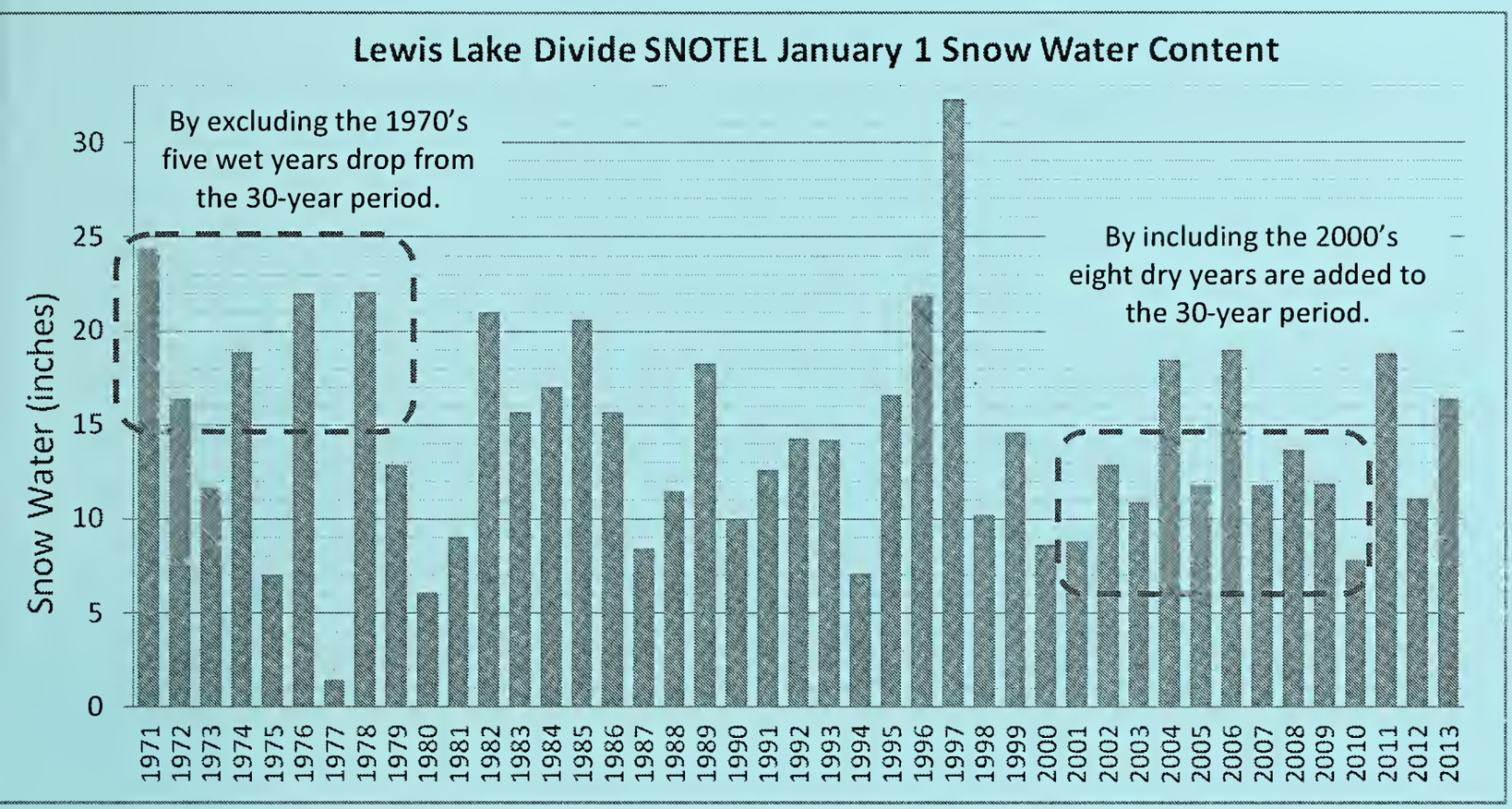
United States Department of Agriculture
Natural Resources Conservation Service

Idaho Water Supply Outlook Report January 1, 2013



What is the upshot of changing 30-year normal periods?

Every decade there is shift in the 30-year period used to calculate normals. **The change requires all of us to recalibrate our expectations when using percentages to understand the water supply.** The World Meteorological Organization (WMO) established a 30-year reference period since it is long enough to filter out year-to-year variation, but also short enough to show climatic trends. Starting this year, all percent of normal values will be calculated using the 1981-2010 period instead of the 1971-2000 period. The above graph from Lewis Lake SNOTEL illustrates that by excluding the wet 1970's and including the dry 2000's, the January 1 normal decreases from 14.8" to 13.3". The decrease illustrates that the early winter climate became drier in the last decade. The important side effect of decreasing the normal is that it inflates the percentages. Consider that this year Lewis Lake has 16.4" of snow water, dividing by the 1971-2000 normal of 14.8" the snowpack is 111% of normal, however dividing by the 1981-2010 normal of 13.3" the snowpack is 123%. By lowering the normal the reported snowpack percent of normal increased by 12%. The amount of snow water is the same, but the inflated percentage makes conditions sound better. On average, the shift is about 5-15% upwards for most sites. Please refer to the table inside for further comparison on a basin level. **Water users should be conservative with their decisions until they have had time to recalibrate themselves to the new normals. Use caution and do not let the inflated percentages trick you into thinking there is more water than actually exists.**

Basin Outlook Reports
and Federal - State - Private Cooperative Snow Surveys

For more water supply and resource management information, or to subscribe to this publication

Contact - - Your local county Natural Resources Conservation Service Office
or
Natural Resources Conservation Service
Snow Surveys
9173 West Barnes Drive, Suite C
Boise, Idaho 83709-1574
(208) 378-5740

Internet Web Address
http://www.id.nrcs.usda.gov/snow/

To join a free email subscription list contact us by email at: IDBOISE-NRCS-SNOW@one.usda.gov

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when the snow melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to produce runoff forecasts. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertainty is in the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

IDAHO WATER SUPPLY OUTLOOK REPORT
JANUARY 1, 2013

SUMMARY

The climatic variability we saw in 2012 is continuing into the 2013 water year, already resulting in a unique snowpack situation throughout the state. Here is what we know: the anticipated El Nino oceanic condition that developed in the summer changed to a neutral condition by fall's end. This is good news, as neutral conditions tend to be associated with near normal precipitation across most of the Western United States. However, we have not seen a year with a mid-season switch in quite a while. Warm valley temperatures in November allowed mostly rain to fall up to 6,500 feet. Cold temperatures above 7,000 feet allowed this abundant moisture to fall as snow several feet thick in Idaho's central mountains. As a result, a handful of sites above 7,000 feet in central Idaho were reporting record high snow water content levels in December while their neighboring lower elevation sites were reporting near record low levels.

In the Payette basin Squaw Flat and Brundage Reservoir SNOTEL sites received more than 25 inches total precipitation since the water year started October 1, a near record. In the Panhandle Region Hidden Lake and Bear Mountain SNOTEL sites each received over 40 inches of precipitation since October 1; not a record, but just a lot of rain and snow. This region as a whole has received nearly half of its normal annual precipitation in the first three months of the water year!

The lowest January 1 snowpacks are in Idaho's lower elevation watersheds, the Weiser and Owyhee, with 68% and 83% of normal, respectively. The highest snowpack is 163% in the Big Lost basin, which has over two-thirds of its early April seasonal peak! The key to good snow this year is elevation. The higher your mountains, the better your snowpack. The Lost River Range and Pioneer Mountains are home to most of the tallest peaks in Idaho and host Idaho's highest snowpack percentages.

What is certain is that there is water in the bank. Overall, most Idaho reservoirs are 80-115% of average with the exception of a few in central and southern Idaho at 30-65% of average. Soil moisture recovered from the dry summer and is in good shape from the November rain, especially in northern Idaho. Streamflow forecasts mirror the snowpack ranging from 65-75% of average in the Bear and Salmon Falls basins to 110-135% in the Wood and Lost basins. Keep in mind, last April when a large percent of snow in the mid-elevations melted, but the remaining higher elevation snow was enough to sustain good flows in the basins north of the Snake River. Will history repeat itself with a well above average snowpack at higher elevations? Stay tuned with winter just starting December 21; we are not even half way through the season. The persistent storm track from November and December has subsided and the cold, clear weather in late December and early January is now dropping snowpack percentages several points a day.

SNOWPACK

As the saying goes, if you could take Idaho and roll it flat, Idaho would be bigger than Texas. To understand your snowpack this year, you really have to understand the elevation in your basin and amount of land above certain thresholds. These elevation thresholds are playing a critical role where snow falls and accumulates this year. Air temperature decreases three to four degrees per 1000 feet elevation gain and because the storms in November and December were warmer than normal there was a distinct dividing line between rain and snow. If you tend to lump things together, basin snowpack percentages as a whole range from 130-160% of normal in Idaho's central mountains to 68% in the Weiser basin. Elsewhere the snowpack is near normal at 80-120% of the new 1981-2010

medians. However, if you are a splitter, the snowpack in the Boise basin is only 58% of normal below 6,500 feet, and 123% of normal above this elevation; overall the Boise snowpack is 98% of normal. Also interesting is that the snow water content at Cozy Cove, Graham Guard Station and Bogus Basin SNOTEL sites, all below 6,100 feet, is near record low levels since daily records start. In the Little Wood basin, 7,000 feet is the dividing zone between a really good snowpack of 150% of normal and an above normal snowpack of 115%. In the Big Wood basin, 6,000 feet is the dividing band between below normal snow at Camas Creek and Soldier Ranger Station, and sites in the 7,400-8,800 foot elevation zone that are 150% of normal.

The shift from using 1971-2000 normals to 1981-2010 normals, shown on cover, affects the percent of normal values. All values stated in this report are based on the 1981-2010 period. To compare old and new percentages by watershed refer to the table below. For a site by site percentage comparison refer to this link: ftp://ftp-fc.sc.egov.usda.gov/ID/snow/data/averages/Jan1-71vs81.pdf

Basin	# Sites	January 1 SWE as % of 1971-2000 Average	January 1 SWE as % of 1981-2010 Median	Difference
Northern Panhandle	7	117%	132%	15%
Spokane	10	77%	92%	15%
Clearwater	14	75%	86%	11%
Salmon	22	106%	113%	7%
Weiser	3	67%	72%	5%
Payette	11	100%	105%	5%
Boise	9	93%	103%	10%
Big Wood	9	124%	133%	9%
Little Wood	4	145%	147%	2%
Big Lost	4	155%	168%	13%
Little Lost, Birch	4	117%	133%	16%
Medicine Lodge, Beaver, Camas	4	111%	123%	12%
Henrys Fork, Teton	7	104%	111%	7%
Snake above Palisades	17	93%	112%	19%
Willow, Blackfoot, Portneuf	6	70%	85%	15%
Snake Basin Above American Falls	27	93%	108%	15%
Goose	2	79%	88%	9%
Salmon Falls	5	78%	83%	5%
Bruneau	5	75%	83%	8%
Owyhee	7	62%	79%	17%
Bear River	15	85%	102%	17%

PRECIPITATION

After a long dry summer that recorded minimal valley and mountain precipitation because of the dominating high pressure ridge that stopped storms from tracking into the state, the gates finally opened up. October precipitation ranged from 65-85% of normal across southern and central Idaho, while west-central and northern Idaho received 165-180%. Luckily, the wet trend continued into November to finally put the remaining forest fires out by bringing 200% of normal precipitation amounts to the Big Lost and Little Wood basins. Elsewhere, November amounts were 100-150% north of the Snake River, 65-75% south of the Snake and 89% in the Bear River. December continued the variable weather pattern with the Spokane, Clearwater and Boise basins receiving the lowest amounts

at 115% of normal while the Big Lost, Oakley, Bruneau, and Owyhee basins were the wettest at 150%. Precipitation since the water year started October 1 ranges from a high of 150% of normal in the Panhandle Region, Big Lost and Little Wood basins to 100-105% of normal across southern Idaho and the Upper Snake. Additional concerns this season are possible rapid melt from rain or an earlier melt because of the loss of canopy and blackened areas in the many acres that burned. A gradual spring melt with moderate spring precipitation would be ideal to re-establish vegetation in the burned areas.

RESERVOIRS

Idaho's reservoirs are in good shape this year with some water in the account and snow in the high country waiting to melt and fill them up. From north to south: Pend Oreille and Priest lakes are above average while Coeur d'Alene is below and waiting for another low elevation runoff event. Dworshak Reservoir is 63% of average. The Payette and Boise reservoir systems are storing near average totals. Magic Reservoir is low at 23% of average, 10% of capacity, after drafting for hydropower plant work. Little Wood Reservoir is 92% of average while Mackay Reservoir received a boost from the November rain and is 119% of average. Jackson Lake is 127% of average while Palisades Reservoir is less at 48% of average. American Falls is refilling and is half full, 84% of average. Bear Lake is 96% of average, 62% full because of the 2011 runoff. Montpelier, Oakley, Salmon Falls, Wildhorse and Owyhee reservoirs are 55-70% of average.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and in some cases, dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

Antecedent streamflow this fall and early winter vary like Idaho's climate. Northern Idaho streams were flowing above average from the October and November precipitation while southern Idaho's streams recovered some from the extremely dry summer, but remain flowing at average or less prior to the sub-zero temperature setting-in. Soil moisture across the state also mirrors the precipitation and fall streamflow levels. Streamflow forecasts range from 65–85% in the Salmon Falls and the Bear River basin in southern Idaho, to higher than 125% in central Idaho. The NRCS publishes five probability streamflow forecast values for each point; the future storm track and temperatures in the second half of winter will help users determine which way to hedge. Will we continue the extended dry and cold weather occurring in early January or return to the wild and variable weather we have come to expect?

Following are proposed streamflow forecast changes. Please provide us with comments or concerns.

Smith Creek near Porthill – N. Idaho, discontinued due to current data not being available since 2002.

Falls River near Ashton – E. Idaho, Propose moving forecast to Falls River above Yellowstone Canal near Squirrel gage with no adjustments.

Big Wood River above Stanton – Central Idaho, propose dropping the Willow Creek adjustment and forecast the Big Wood River at Stanton Crossing near Bellevue by combining records with the long-term Big Wood River near Bellevue station that did not include minimal Willow Creek flow.

Gros Ventre River at Kelly – Upper Snake, Wyoming, streamgage and forecasts are discontinued.

Note: The volumes referenced in these narratives are the 50% Chance of Exceeding Forecast, unless otherwise noted. Users may wish to use a different forecast to reduce their risk of having too much or too little water. Forecasts published in this report are produced by the USDA NRCS.

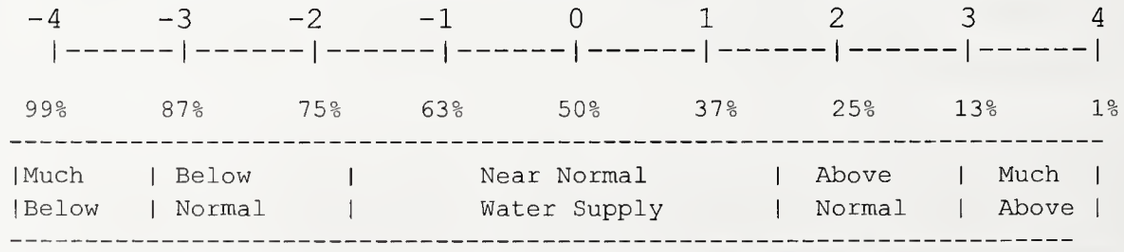
IDAHO SURFACE WATER SUPPLY INDEX (SWSI) January 1, 2013

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.0 (abundant supply) to -4.0 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences. The SWSI analysis period is from 1971 to present.

SWSI values provide a more comprehensive outlook of water availability by combining streamflow forecasts and reservoir storage where appropriate. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been determined for some basins to indicate the potential for agricultural irrigation water shortages.

BASIN or REGION	***SWSI Value***	***Most Recent Year With Similar SWSI Value***	***Agricultural Water Supply Shortage May Occur When SWSI is Less Than***
Northern Panhandle	-0.5	1995	NA
Spokane	-0.5	2010	NA
Clearwater	NA	NA	NA
Salmon	NA	NA	NA
Weiser	-0.3	2003	NA
Payette	0.8	2008	NA
Boise	1.0	1995	-1.5
Big Wood	0.5	2012	0.5
Little Wood	1.5	2011	-1.5
Big Lost	2.3	2006	0.5
Little Lost	0.8	2010	1.3
Teton	0.5	2010	-3.8
Henrys Fork	0.3	2009	-3.5
Snake (Heise)	0.3	2008	-1.5
Oakley	0.0	2012	0.6
Salmon Falls	-1.3	2000	-0.5
Bruneau	-0.4	2010	NA
Owyhee	0.8	2005	-3.0
Bear River	0.6	2012	-3.3

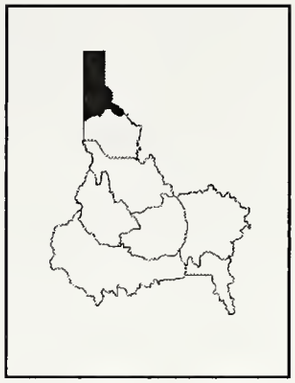
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

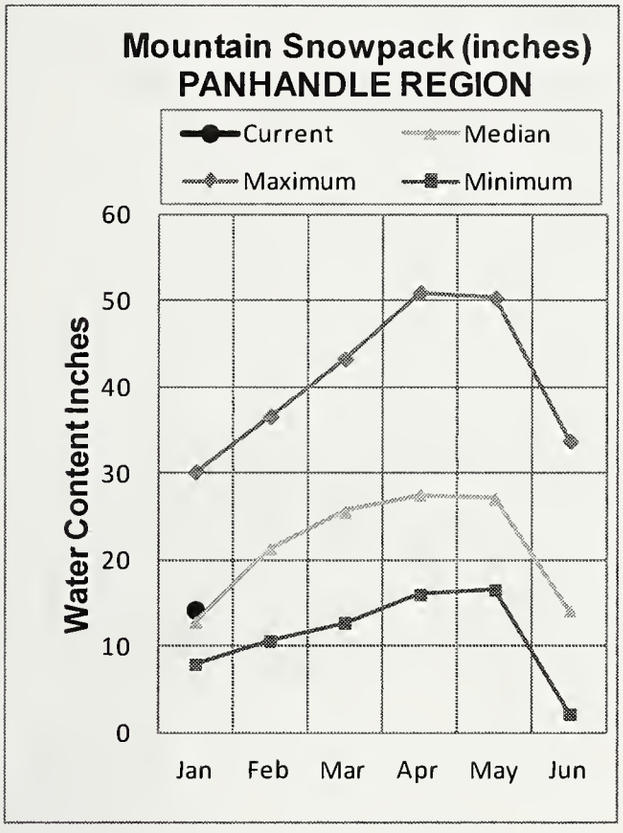


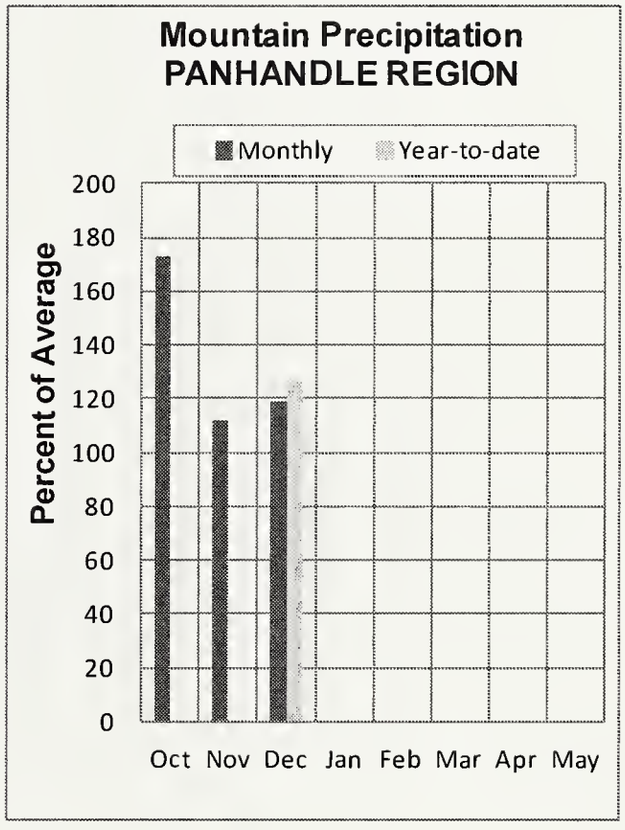
NA=Not Available / Not Applicable; Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

PANHANDLE REGION

JANUARY 1, 2013







WATER SUPPLY OUTLOOK

The Panhandle Region's water supply is off to a good start this year. The region received above normal precipitation in October, November and December bringing water year to date precipitation since October 1 to 143% of normal in the far Northern Panhandle. During the same period the Spokane basin's precipitation totaled 121%. The snowpack in North Idaho has increased steadily since early November. The January 1 snowpack is 126% of normal in the Northern Panhandle and 91% of normal in the Spokane basin. Pend Oreille, Coeur d'Alene and Priest lakes are all storing more water than at this point last year. Streamflow forecasts range from near normal for the Spokane River and the NF Coeur d'Alene River to up to 124% of normal for the Moyie River. The above percentages are based on the new 1981-2010 normals. This month's cover points out these normals are lower than the 1971-2000 normals. The result of lower normals is that percent of normal snow and streamflow values are higher than they would have been. Please recalibrate your expectations based on the new normals.

PANHANDLE REGION
Streamflow Forecasts - January 1, 2013

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Moyie R at Eastport	APR-JUL	330	410	465	124	520	600	375
	APR-SEP	345	425	480	125	535	615	385
Boundary Ck nr Porthill	APR-JUL	100	119	132	113	145	164	117
	APR-SEP	105	125	138	112	151	171	123
Pend Oreille Lake Inflow (2)	APR-JUL	9963	11652	12800	109	13948	15637	11800
	APR-SEP	11146	12905	14100	110	15295	17054	12800
Priest R nr Priest River (1,2)	APR-JUL	710	850	945	121	1040	1180	780
	APR-SEP	750	900	1000	121	1100	1250	830
NF Coeur d'Alene R at Enaville	APR-JUL	419	595	715	102	835	1011	700
	APR-SEP	455	634	755	102	876	1055	740
St. Joe R at Calder	APR-JUL	738	942	1080	103	1218	1422	1050
	APR-SEP	801	1009	1150	103	1291	1499	1120
Spokane R nr Post Falls (2)	APR-JUL	1526	2064	2430	102	2796	3334	2390
	APR-SEP	1611	2158	2530	102	2902	3449	2480
Spokane R at Long Lake (2)	APR-JUL	1697	2306	2720	104	3134	3743	2620
	APR-SEP	1893	2522	2950	104	3378	4007	2850

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	1971-00 Avg
HUNGRY HORSE	3451.0	3162.9	3003.0	2420.9
FLATHEAD LAKE	1791.0	1135.7	1187.0	1192.7
NOXON RAPIDS	335.0	322.7	314.2	315.8
Pend Oreille	1561.3	900.3	641.0	673.4
Coeur d'Alene	238.5	72.9	50.9	110.1
Priest Lake	119.3	64.1	53.2	55.7

PANHANDLE REGION
Watershed Snowpack Analysis - January 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry			
Moyie River			
Priest River		1981-2010 normals not	
Pend Oreille River		available at press time	
Rathdrum Creek			
Coeur d'Alene River			
St. Joe River			
Spokane River			
Palouse River			

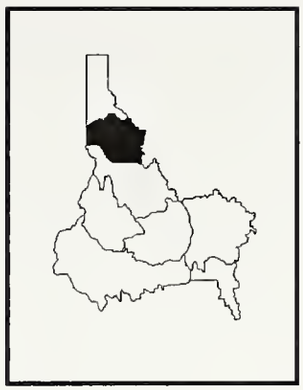
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

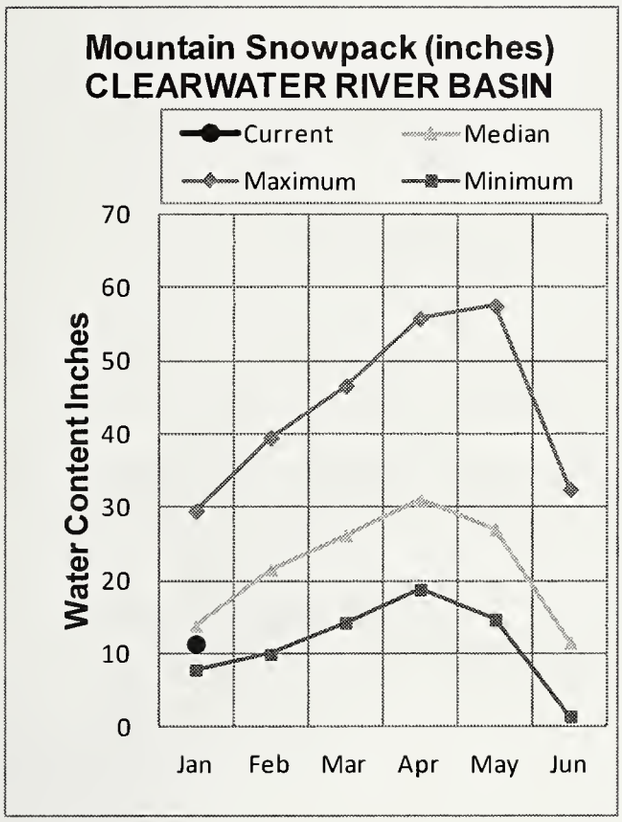
The average is computed for the 1981-2010 base period.

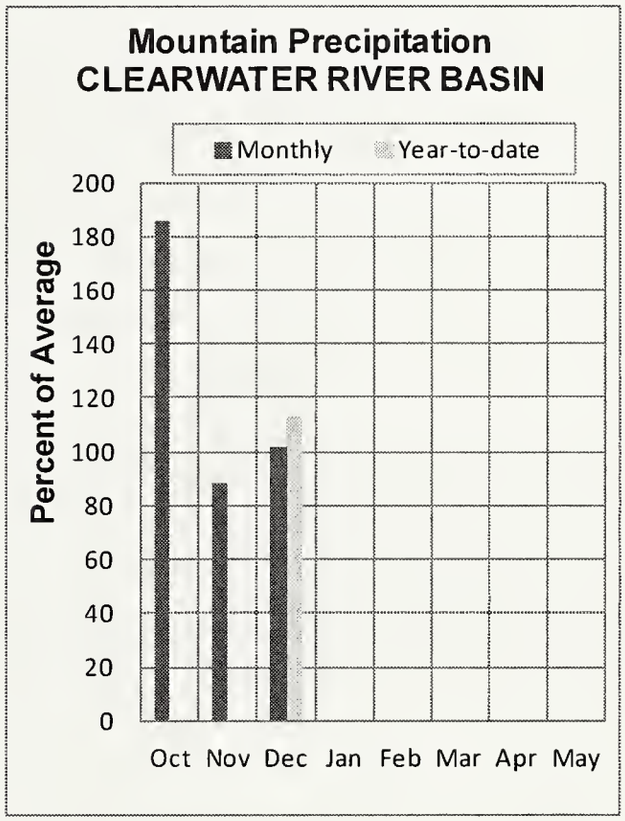
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

CLEARWATER RIVER BASIN

JANUARY 1, 2013







WATER SUPPLY OUTLOOK

Heavy precipitation in October provided the Clearwater Basin with a fast start this water year. A number of SNOTEL sites recorded twice their normal amounts of rain in October. Hemlock Butte SNOTEL near Pierce measured 9.9 inches for the month, which was a new October record based on 28 years. Water year to date precipitation since October 1 is 116% of average basin-wide. Snow in the Clearwater basin is 87% of normal. Dworshak Reservoir is storing 1,565,400 acre-feet which is 63% of average, 45% of capacity. Streamflow forecasts are near average for the Selway and Locsha rivers and 110% of normal for the Clearwater River at Orofino. Starting this year, all percentages are based on the 1981-2010 normals. In previous years the 1971-2000 averages were used to calculate the percent of normal values. Since the 1970s were wet and the 2000s were dry, the change in period resulted in lower averages. The lower normals result in higher percent of normal values. For example, this month snow percentages in the Clearwater would have been about 10% lower (77% instead of 87%) if the 1971-2000 averages were used in the calculation. The new normals better represent the shifting climatic norms, but they also require us to recalibrate our idea of an adequate snowpack and streamflow percentages. Be sure to read this month's cover for more information about averages.

CLEARWATER RIVER BASIN
Streamflow Forecasts - January 1, 2013

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Selway R nr Lowell	APR-JUL	1390	1690	1900	99	2110	2410	1920
	APR-SEP	1480	1790	2000	99	2210	2520	2020
Lochsa R nr Lowell	APR-JUL	1040	1260	1420	101	1580	1800	1410
	APR-SEP	1110	1340	1500	101	1660	1890	1480
Clearwater R at Orofino (1)	APR-JUL	2520	4040	4730	110	5420	6940	4310
	APR-SEP	2780	4300	4990	110	5680	7200	4540

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	1971-00 Avg
Dworshak	3468.0	1565.4	2256.3	2481.4

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - January 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
North Fork Clearwater			
Lochsa River		1981-2010 normals not	
Selway River		available at press time	
Clearwater Basin Total			

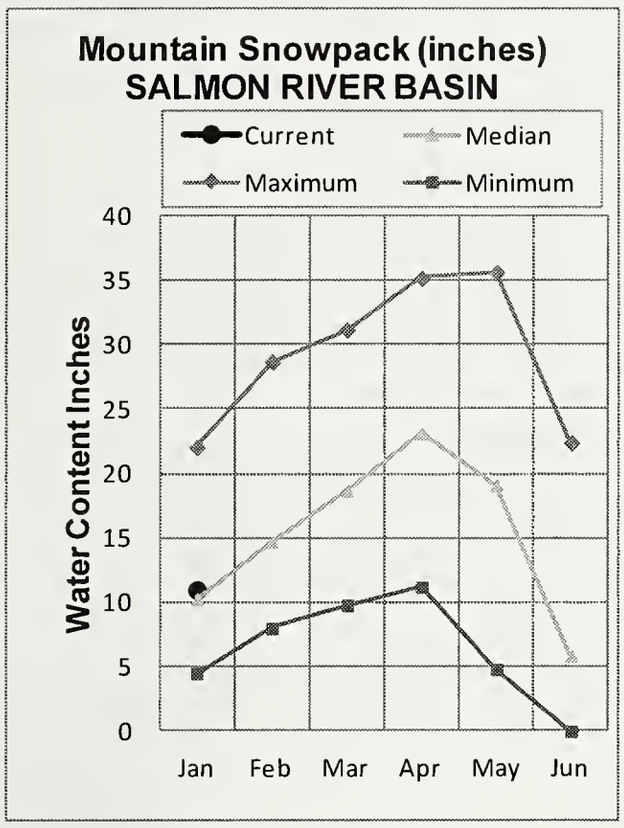
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

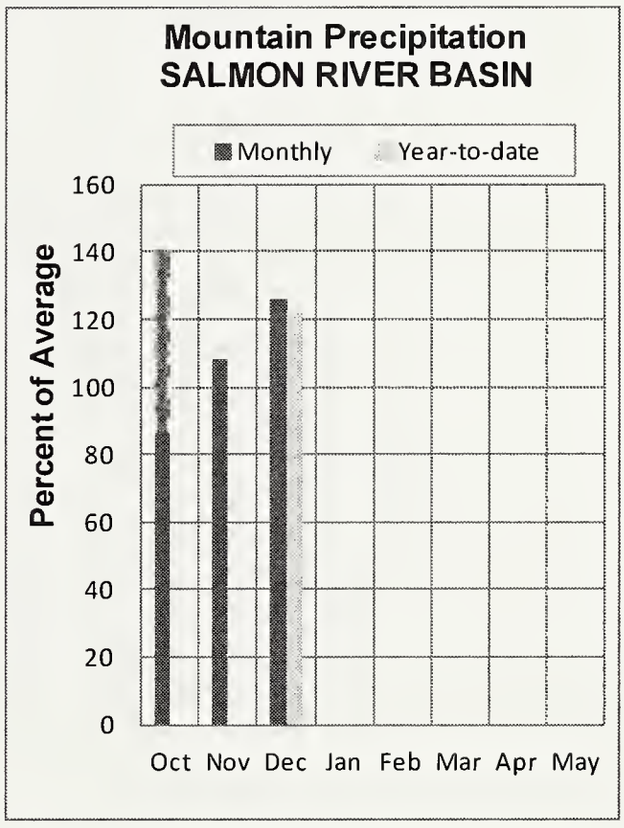
The average is computed for the 1981-2010 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management

SALMON RIVER BASIN

JANUARY 1, 2013





WATER SUPPLY OUTLOOK

The water year is off to a good start in the Salmon Basin. Monthly precipitation in October, November and December was above average, leaving water year to date precipitation at 128% of average since October 1. The season's first storms produced rain at SNOTELs below 6,500 feet, meanwhile snow piled up at higher elevation stations. The Salmon's snowpack still displays quite a disparity above and below this threshold elevation. As of January 1 snow at sites above 6,500 feet is 123% of normal, while snow at sites below 6,500 feet is 80% of normal. Overall the Salmon basin snowpack is 113% of normal. Streamflow forecasts show the potential for excellent summer flows. The MF Salmon River is forecast at 130% of normal while the Salmon River at Salmon is forecast at 121%. The influence of changing averages, as mentioned on this month's cover, is slightly reduced in the Salmon basin as compared to other parts of Idaho. Overall the Salmon basin snowpack is about 8 percentages points higher using the 1981-2010 normal, instead of the 1971-2000 average. Nonetheless, please understand the effects of the average change and recalibrate your expectations, so the somewhat inflated snow and streamflow percentages don't let you down when the snow starts melting.

SALMON RIVER BASIN
Streamflow Forecasts - January 1, 2013

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Salmon R at Salmon (1)	APR-JUL	545	815	935	121	1060	1320	775
	APR-SEP	635	940	1080	120	1220	1530	900
Lemhi R nr Lemhi	APR-JUL	39	59	75	101	93	122	74
	APR-SEP	49	72	90	100	110	143	90
MF Salmon R at MF Lodge	APR-JUL	575	770	905	131	1040	1240	690
	APR-SEP	640	855	1000	130	1150	1360	770
SF Salmon R nr Krassel RS	APR-JUL	220	275	315	117	355	410	270
	APR-SEP	230	290	330	114	370	430	290
Johnson Ck at Yellow Pine	APR-JUL	145	184	210	110	235	275	191

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
This table is intentionally left blank				

SALMON RIVER BASIN
Watershed Snowpack Analysis - January 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon			
Lemhi River		1981-2010 normals not	
Middle Fork Salmon River		available at press time	
South Fork Salmon River			
Little Salmon River			
Salmon Basin Total			

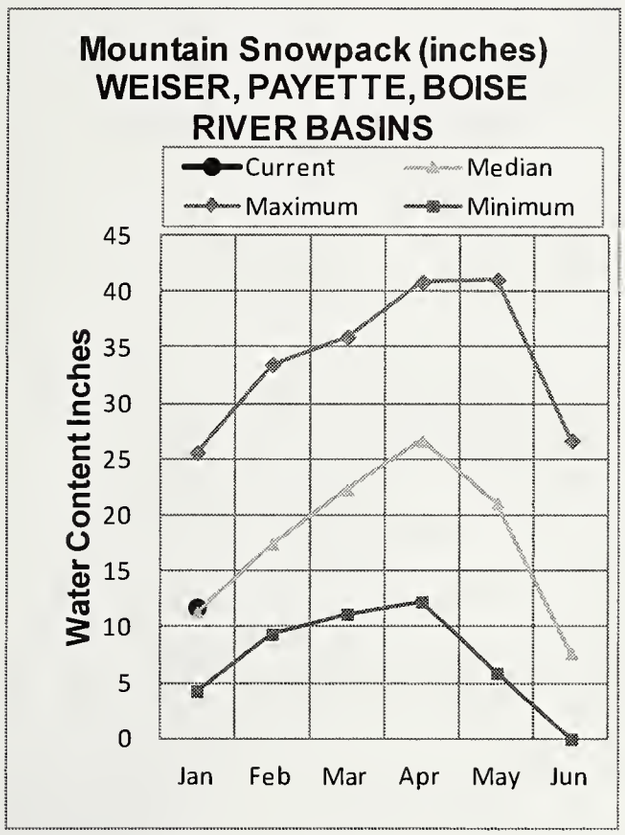
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

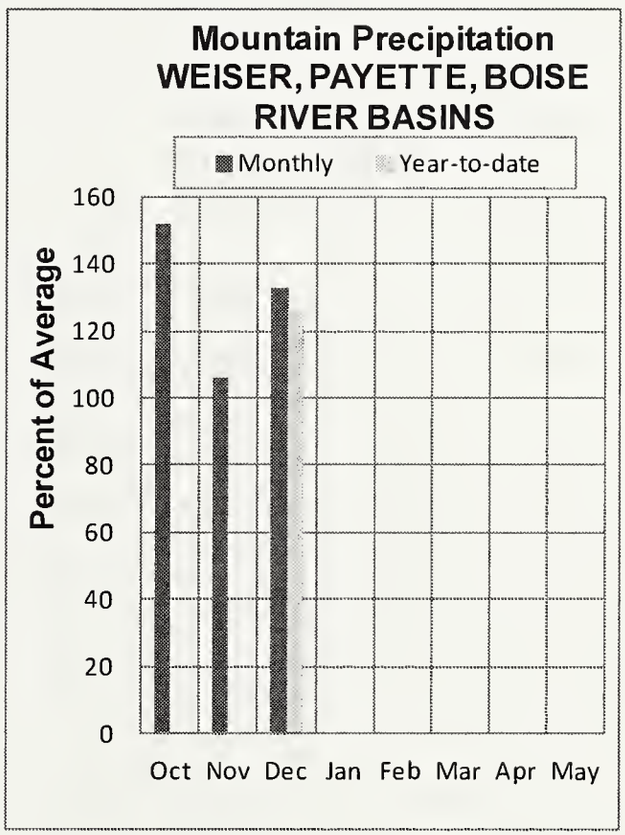
The average is computed for the 1981-2010 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS

JANUARY 1, 2013





WATER SUPPLY OUTLOOK

The west central mountains had a very wet start to the water year. Near record precipitation was measured at Squaw Flat and Brundage Reservoir SNOTELs, each recorded in excess of 25 inches since October 1. In fact only 1997 had more precipitation from October through December based on measurements going back to 1981. Water year to date precipitation since October 1 is 135% of average in the Weiser and Payette basins and 117% of average for the Boise. Above freezing temperature prevented much snow accumulation below 6,500 feet until mid-December. Snowpack percentages still show a pronounced high to low elevation split in the west central mountains where above 6,500 feet snow is 123% of normal, while below that elevation it is only 58% of normal. Overall, the Boise and Payette snowpacks are near normal based on the 1981-2010 normal period. The Weiser basin snowpack is only 68% of average due to its lower elevation terrain. Reservoir storage is slightly above average in the Payette system and near average for the Boise system. All reservoirs are storing substantially less than last year at this time. Streamflow forecasts across these basins are 100-115% of normal, with the exception of Mores Creek which is slightly below normal due to lower snow amounts below 6,500 feet. This report's cover points out the effects of changing the normal periods from 1971-2000 to 1981-2010. Boiled down, removing the wet 1970s and adding the dry 2000s means percentages are inflated for snow and streamflow. A near normal snowpack this year would be a 90% of normal snowpack last year when used with the 1971-2000 period. Please understand the effects of the 30 year period change and recalibrate your expectations accordingly.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - January 1, 2013

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Weiser R nr Weiser (1)	FEB-JUL	205	460	610	99	780	1240	615
	APR-JUL	119	275	365	99	470	745	370
	APR-SEP	134	295	390	98	500	780	400
SF Payette R at Lowman	APR-JUL	270	345	405	101	470	570	400
	APR-SEP	310	395	460	101	530	640	455
Deadwood Resv Inflow (1,2)	APR-JUL	82	122	141	115	160	200	123
	APR-SEP	86	130	150	115	170	215	131
Lake Fork Payette R nr McCall	APR-JUL	66	80	90	113	101	118	80
	APR-SEP	68	82	93	112	104	122	83
NF Payette R at Cascade (1,2)	APR-JUL	285	460	540	111	620	795	485
	APR-SEP	285	470	555	112	640	825	495
NF Payette R nr Banks (2)	APR-JUL	485	620	710	114	800	935	625
	APR-SEP	480	625	720	113	815	960	640
Payette R nr Horseshoe Bend (1,2)	APR-JUL	1000	1470	1680	114	1890	2360	1480
	APR-SEP	1070	1550	1770	109	1990	2470	1630
Boise R nr Twin Springs (1)	APR-JUL	340	535	625	107	715	910	585
	APR-SEP	375	580	675	106	770	975	635
SF Boise R at Anderson Ranch D (1,2)	APR-JUL	285	490	580	122	670	875	475
	APR-SEP	305	520	615	121	710	925	510
Mores Ck nr Arrowrock Dam	APR-JUL	48	79	104	90	133	181	115
	APR-SEP	50	81	107	90	136	186	119
Boise R nr Boise (1,2)	APR-JUN	770	1110	1260	111	1410	1750	1140
	APR-JUL	817	1232	1420	113	1608	2023	1260
	APR-SEP	910	1330	1520	112	1710	2130	1360

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	1971-00 Avg
Mann Creek	11.1	2.4	1.7	3.3
Cascade	693.2	502.2	489.7	456.4
Deadwood	161.9	94.9	94.1	82.5
Anderson Ranch	450.2	270.9	373.8	296.8
Arrowrock	272.2	174.8	192.9	173.1
Lucky Peak	293.2	91.7	87.1	95.5
Lake Lowell (Deer Flat)	165.2	119.5	120.3	98.4

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Mann Creek			
Weiser River		1981-2010 normals not	
North Fork Payette		available at press time	
South Fork Payette			
Payette Basin Total			
Middle & North Fork Boise			
South Fork Boise River			
Mores Creek			
Boise Basin Total			
Canyon Creek			

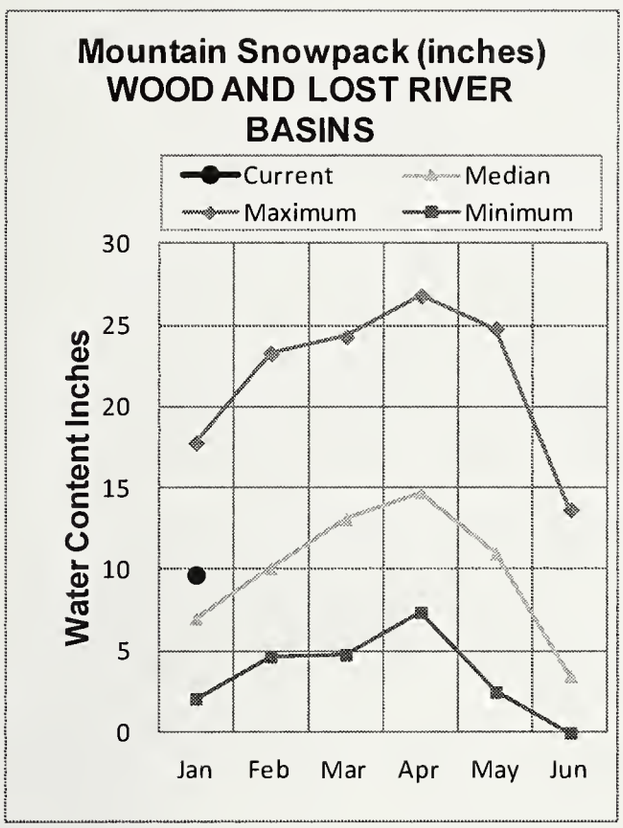
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

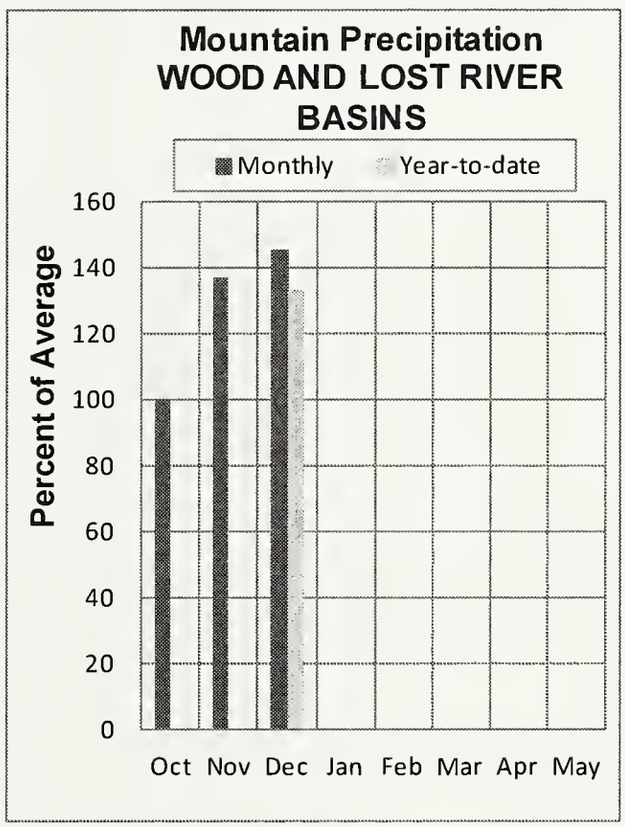
The average is computed for the 1981-2010 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management

WOOD and LOST RIVER BASINS

JANUARY 1, 2013





WATER SUPPLY OUTLOOK

The Wood and Lost basins are off to a great start this water year and boast the best snowpack in Idaho. Many sites recorded twice the usual November precipitation amounts. December's precipitation wasn't far off that pace with monthly amounts of 150%. Water year to date precipitation since October 1 is 151% in the Little Wood, 146% of average in the Big Lost, 138% in the Big Wood and 117% Little Lost. Because of higher elevations snow accumulated earlier at SNOTEL sites in this region compared to other central Idaho basins with slightly lower elevations. In November and early December 6,500 feet was the critical rain-to-snow threshold elevation. With nearly all Wood and Lost basin SNOTEL sites above this threshold the snowpack in these basins is 133-163% of normal. The Big Lost's January 1 snowpack is the best since 1997. The Little Lost and Little Wood basins have nearly the same amount of snow as 2011, which is an amount greater than any other year since 1997. The Big Wood's snow is the greatest since 2006. Water storage is near average or better for Little Wood and Mackay reservoirs. Magic's storage is low after the reservoir was drafted in order to complete maintenance; that work is completed and storage levels are now recovering. With ample precipitation and a good snowpack, summer streamflow forecasts are above average ranging from 110-140%. The lowest forecast is for Camas Creek at 104% of average. Winter is not even half over so more snow is certainly needed, but at this point the water supply outlook is promising. Take time to read this month's cover in order to understand how the new 30 year averages drive up the percent of normal amounts.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - January 1, 2013

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Big Wood R at Hailey (1)	APR-JUL	127	245	300	128	355	475	235
	APR-SEP	148	280	340	128	400	530	265
Big Wood R ab Magic Res	APR-JUL	85	148	205	121	275	405	170
	APR-SEP	88	159	225	124	305	460	182
Camas Ck nr Blaine	APR-JUL	21	54	85	104	123	192	82
	APR-SEP	22	55	86	104	124	193	83
Big Wood R bl Magic Dam (2)	APR-JUL	90	205	280	112	355	470	250
	APR-SEP	104	220	300	113	380	495	265
Little Wood R ab High Five Ck	MAR-JUL	50	81	106	138	134	182	77
	MAR-SEP	55	87	114	139	144	195	82
Little Wood R near Carey (2)	MAR-JUL	54	87	109	127	131	164	86
	MAR-SEP	59	94	117	127	140	175	92
Big Lost R at Howell Ranch	APR-JUL	128	174	205	129	235	280	159
	APR-SEP	148	200	235	131	270	320	180
Big Lost R Below Mackay Res	APR-JUL	91	135	166	135	197	241	123
	APR-SEP	119	170	205	137	240	291	150
Little Lost R nr Howe	APR-JUL	18.2	25	30	107	36	45	28
	APR-SEP	22	31	37	109	44	55	34
Camas Ck at Camas	APR-JUL	10.5	25	35	125	45	59	28

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	1971-00 Avg
Magic	191.5	18.4	113.2	79.7
Little Wood	30.0	13.0	23.5	14.1
Mackay	44.4	28.3	33.0	23.7

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - January 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey			
Camas Creek		1981-2010 normals not	
Big Wood Basin Total		available at press time	
Fish Creek			
Little Wood River			
Big Lost River			
Little Lost River			
Birch-Medicine Lodge Cree			
Camas-Beaver Creeks			

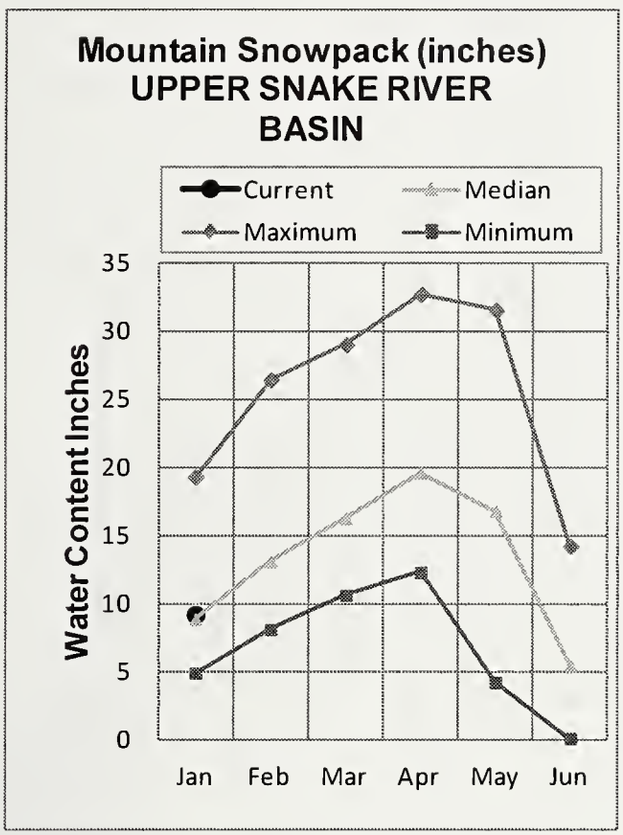
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

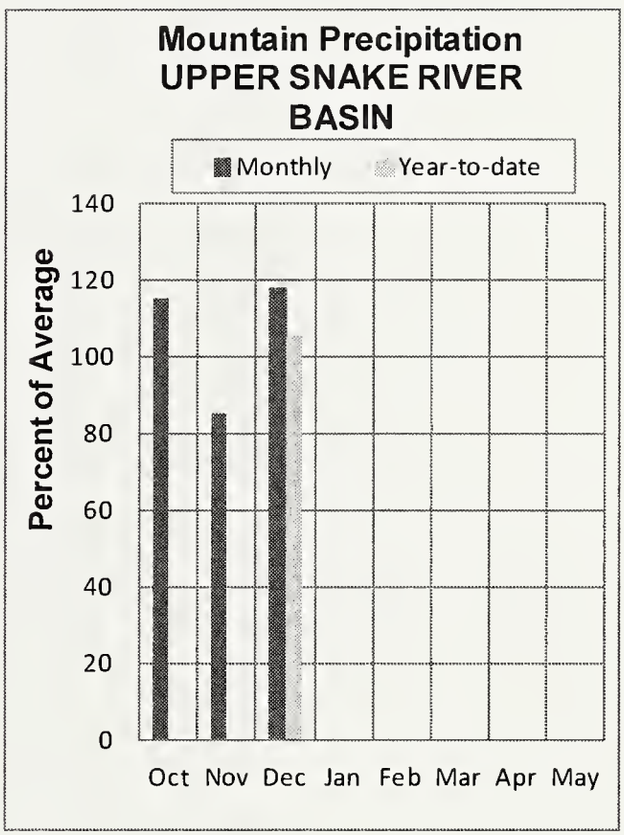
The average is computed for the 1981-2010 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

UPPER SNAKE BASIN

JANUARY 1, 2013





WATER SUPPLY OUTLOOK

Snow and water supply conditions in the Upper Snake basin are off to a promising start. Monthly precipitation in October and December was above average, while November was a little drier than average. Overall, water year to date precipitation since October 1 is 113% of average for the Henrys Fork, 105% for the Snake above Palisades, and 107% for the Willow, Blackfoot and Portneuf basins. Overall, the snowpack is 108% of normal when you average all 29 SNOTEL sites in the basin above American Falls. Snow percentages show a wide range of values across the basin as sites below 6,500 feet continued to receive rain and little snow fell until December. To illustrate this compare Island Park SNOTEL, 6,290 feet, to White Elephant SNOTEL, 7,710 feet. These neighboring sites in the Henrys Fork headwaters have 78% and 150% of normal snow respectively. Tributary-wise this elevation effect explains the below normal snow in the Willow, Blackfoot and Portneuf drainages. Water storage for the eight Upper Snake reservoirs equals 2,388,000 acre-feet, which is 52% of capacity and 81% of average. Forecasts are for near normal summer streamflow for all points, with the exception of the Portneuf River which is forecast at 83%. Despite the upward shift in the percent of normal values due to the change in normal periods, as mentioned on this report's cover, the 2013 snowpack is far ahead of last year at this time. Hopefully this trend continues to ensure an adequate water supply.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - January 1, 2013

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Henrys Fork nr Ashton (2)	APR-JUL	380	475	540	102	610	725	530
	APR-SEP	535	640	720	101	805	935	710
Henrys Fork nr Rexburg (2)	APR-JUL	1130	1300	1420	101	1540	1710	1400
	APR-SEP	1490	1680	1810	101	1940	2130	1790
Falls R nr Ashton (2)	APR-JUL	280	330	365	100	405	465	365
	APR-SEP	330	390	430	99	475	545	435
Teton R nr Driggs	APR-JUL	89	124	150	97	179	225	154
	APR-SEP	113	155	187	97	220	280	193
Teton R nr St. Anthony	APR-JUL	220	295	355	97	420	520	365
	APR-SEP	265	355	420	97	495	610	435
Snake R at Flagg Ranch	APR-JUL	380	465	520	112	575	660	465
	APR-SEP	420	510	570	112	630	720	510
Snake R nr Moran (1,2)	APR-JUL	535	730	815	107	900	1090	765
	APR-SEP	590	805	900	107	995	1210	845
Pacific Ck At Moran	APR-JUL	127	163	188	115	215	250	164
	APR-SEP	137	174	199	115	225	260	173
Buffalo Fork ab Lava nr Moran	APR-JUL	230	275	305	109	335	380	280
	APR-SEP	265	315	350	109	385	435	320
Snake R nr Alpine (1,2)	APR-JUL	1350	1970	2250	104	2530	3150	2170
	APR-SEP	1560	2260	2580	103	2900	3600	2500
Greys R Nr Alpine	APR-JUL	196	255	295	97	335	395	305
	APR-SEP	230	300	345	96	390	460	360
Salt R Nr Etna	APR-JUL	139	230	290	97	350	440	300
	APR-SEP	179	285	355	96	425	530	370
Snake R nr Irwin (1,2)	APR-JUL	2090	2750	3050	101	3350	4010	3010
	APR-SEP	2450	3190	3530	101	3870	4610	3500
Snake R nr Heise (2)	APR-JUL	2460	2940	3260	101	3580	4060	3240
	APR-SEP	2880	3420	3790	100	4160	4700	3780
Willow Ck nr Ririe	MAR-JUL	15.3	45	66	99	87	117	67
Blackfoot R ab Res nr Henry	APR-JUN	20	37	52	87	69	98	60
Portneuf R at Topaz	MAR-JUL	35	51	64	84	78	102	76
	MAR-SEP	43	62	77	83	94	121	93

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	1971-00 Avg
Henrys Lake	90.4	89.5	87.2	82.5
Island Park	135.2	96.7	111.9	96.1
Grassy Lake	15.2	12.5	11.8	11.6
Jackson Lake	847.0	611.5	631.1	481.7
Palisades	1400.0	492.5	1236.5	1036.5
Ririe	80.5	44.3	40.5	34.5
Blackfoot	348.7	217.1	273.7	215.3
American Falls	1672.6	824.2	941.1	986.6

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2013

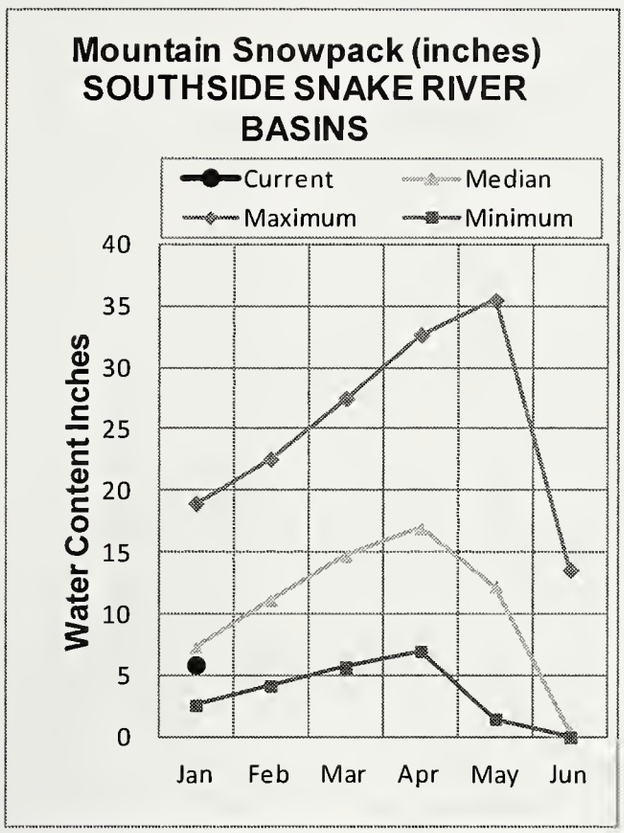
Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Henrys Fork-Falls River			
Teton River		1981-2010 normals not available at press time	
Henrys Fork above Rexburg			
Snake above Jackson Lake			
Pacific Creek			
Gros Ventre River			
Hoback River			
Greys River			

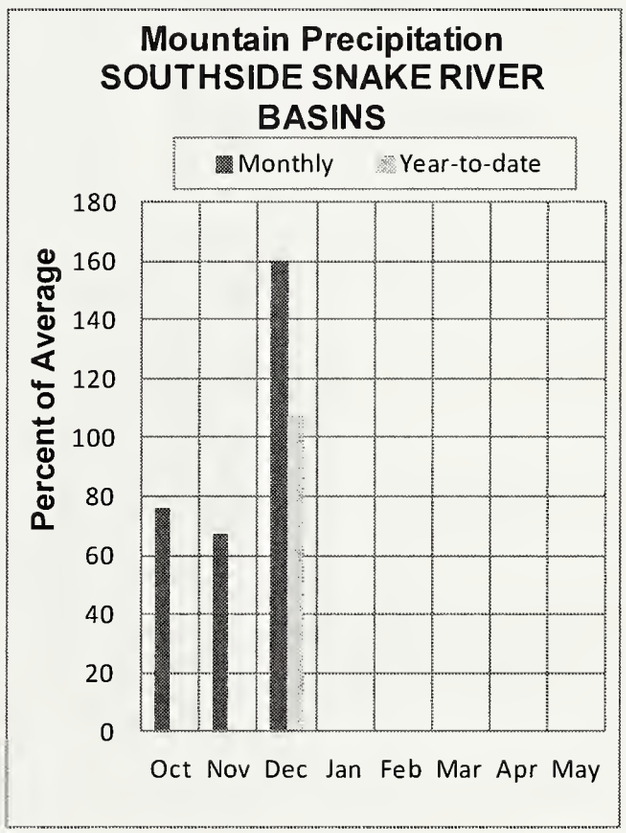
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS

JANUARY 1, 2013





WATER SUPPLY OUTLOOK

Most of Idaho had wetter than normal conditions in October and November, however the basins south of the Snake River were relatively dry until December. Fortunately, December produced about one and a half times its normal monthly precipitation and was enough to bring water year to date totals up to average amounts by January 1. Snow amounts are lagging and range from 83% of normal in the Owyhee, Bruneau and Salmon Falls basins, up to 88% of normal for Goose Creek. The Raft River basin is doing better with 103% of normal snow. With the exception of Brownlee Reservoir, which has above normal storage, all other reservoirs are storing substantially less than average amounts and are only about a third full or less. Streamflow forecasts range from 75% of average for Salmon Falls Creek to 85-90% of average for the Bruneau River, Reynolds Creek and Oakley Reservoir inflow. The Owyhee River below Owyhee Dam has the best forecast at 102% of average. Be hopeful for more snow but be conservative with water supply decisions. This year's low reservoir storage and below normal snow is worrisome. Also be mindful that the new 1981-2010 averages are lower, so snow and streamflow percentages are inflated by about 10% this month compared to what they would have been if the old 1971-2010 averages were still used. Water users need to recalibrate themselves to these new averages. See the cover for an illustration of dropping the wet 1970s values and adding the dry 2000s to the new 1981-2010 comparison period.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - January 1, 2013

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Goose Ck ab Trapper Ck nr Oakley	MAR-JUL	5.7	13.8	19.3	88	25	33	22
	MAR-SEP	6.5	15.1	21	88	27	35	24
Trapper Ck nr Oakley	MAR-JUL	3.2	4.5	5.4	92	6.3	7.6	5.9
	MAR-SEP	4.1	5.6	6.5	92	7.4	8.9	7.1
Oakley Res Inflow (2)	MAR-JUL	9.4	18.7	25	89	31	41	28
	MAR-SEP	12.3	21	28	90	36	50	31
Salmon Falls Ck nr San Jacinto	MAR-JUN	27	45	59	77	75	103	77
	MAR-JUL	28	46	61	75	78	107	81
	MAR-SEP	30	49	65	77	83	113	85
Bruneau R nr Hot Springs	MAR-JUL	84	133	172	84	215	290	205
	MAR-SEP	89	139	180	84	225	305	215
Reynolds Ck at Tollgate	MAR-JUL	2.8	5.8	7.8	89	9.8	12.8	8.8
Owyhee R nr Gold Ck (2)	MAR-JUL	7.7	14.6	21	75	29	44	28
	MAR-SEP	6.6	12.7	18.5	69	26	40	27
Owyhee R nr Rome	FEB-JUL	215	445	600	103	755	985	580
	FEB-SEP	215	450	610	103	770	1000	595
Owyhee R bl Owyhee Dam (2)	FEB-JUL	300	490	650	102	830	1140	635
	FEB-SEP	315	505	665	100	845	1150	665
	APR-SEP	174	300	405	100	525	730	405

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	1971-00 Avg
Oakley	75.6	18.5	31.9	25.7
Salmon Falls	182.6	28.6	84.6	52.6
WILDHORSE RESERVOIR	71.5	24.8	48.2	37.8
OWYHEE	715.0	263.9	492.4	398.1
Brownlee	1420.0	1315.0	1339.1	1303.0

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River			
Goose-Trapper Creeks			
Salmon Falls Creek		1981-2010 normals not	
Bruneau River		available at press time	
Reynolds Creek			
Owyhee Basin Total			
Owyhee Basin SNOTEL			

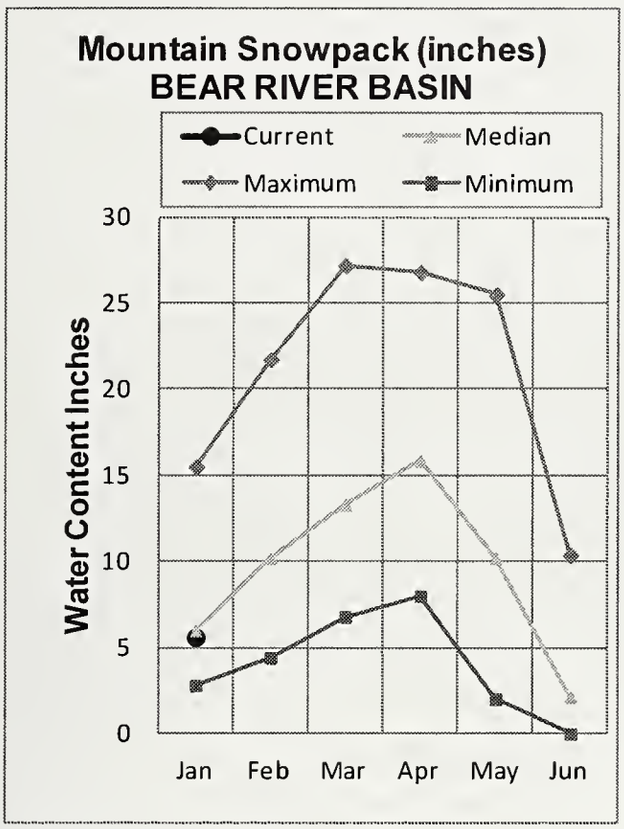
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

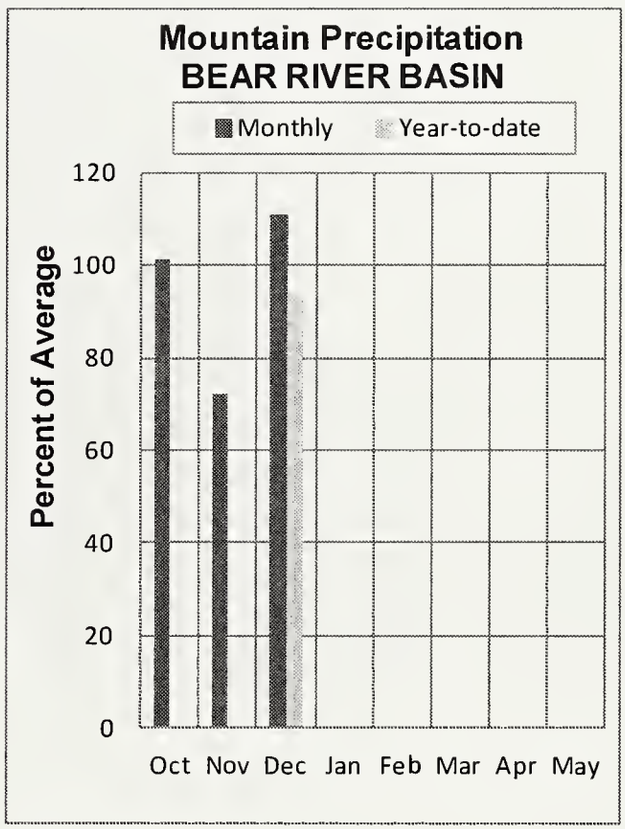
The average is computed for the 1981-2010 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

BEAR RIVER BASIN

JANUARY 1, 2013





WATER SUPPLY OUTLOOK

Based on the new 1981-2010 averages the Bear River is on track for a normal winter. Precipitation was better than average in October and December, making up for a drier than normal November. Water year to date precipitation since October 1 is average, as is the snowpack in the basin. The snowpack is about 125% of normal at Trial Lake and Bug Lake SNOTEL sites in Utah and decreases downstream to about 75% of normal at Emigrant Summit and Oxford Spring SNOTEL sites in Idaho. Bear Lake is storing 875,100 acre-feet, slightly less than normal. Montpelier Reservoir, with 1,100 acre-feet, is 65% of average, 28% full. The Bear River below Stewart Dam is forecast for 67% of average flow for the April-July period. Other forecasts vary from 67% of normal for the Bear River below Stewart Dam to 95% for Blacksmith Fork in Utah. Keep in mind these near normal conditions are based on the normal period from 1981-2010 instead of 1971-2000. By dropping wet years in the 1970s and adding dry ones in the 2000s the 1981-2010 normals are lower than the 1971-2000 averages. Lower snow and streamflow averages produce higher percent of normal values. Water users need to recalibrate themselves. This year's normal snowpack would have been about 85% of normal using the 1971-2000 normals. Be conservative making water supply decisions until we all get a better feel for the effects of the new normals.

BEAR RIVER BASIN
Streamflow Forecasts - January 1, 2013

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear R nr UT-WY State Line	APR-JUL	50	76	94	84	111	138	112
	APR-SEP	54	83	103	84	122	151	123
Bear R ab Res nr Woodruff	APR-JUL	30	66	91	75	116	153	121
	APR-SEP	33	71	96	75	121	159	128
Big Ck nr Randolph	APR-JUL	1.0	2.5	3.6	95	4.7	6.2	3.8
Smiths Fk nr Border	APR-JUL	39	61	76	85	91	113	89
	APR-SEP	49	74	90	87	107	132	104
Bear R bl Stewart Dam	APR-JUL	7.0	58	122	67	186	279	183
	APR-SEP	8.0	64	136	66	208	313	205
Little Bear R at Paradise	APR-JUL	2.0	19.9	32	78	44	62	41
Logan R nr Logan	APR-JUL	36	69	91	82	113	146	111
Blacksmith Fork nr Hyrum	APR-JUL	14.9	30	41	95	52	67	43

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	1971-00 Avg
Bear Lake	1421.0	875.1	1077.9	907.5
Montpelier Creek	4.0	1.1	2.8	1.7

BEAR RIVER BASIN
Watershed Snowpack Analysis - January 1, 2013

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Smiths & Thomas Forks			
Bear River ab WY-ID line			
Montpelier Creek		1981-2010 normals not	
Mink Creek		available at press time	
Cub River			
Bear River ab ID-UT line			
Malad River			

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

Streamflow Adjustment List for All Forecasts Published in Idaho Water Supply Outlook Report: Streamflow forecasts are projections of runoff volumes that would occur without influences from upstream reservoirs or diversions. These values are referred to as natural, unregulated or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made for each forecast point. **(Revised Dec 2011).**

Panhandle River Basins

Kootenai R at Leonia, MT
+ Lake Koocanusa storage change

Moyie R at Eastport – no corrections

Smith Creek nr Porthill – no corrections

Boundary Ck nr Porthill – no corrections

Clark Fork R at Whitehorse Rapids
+ Hungry Horse storage change
+ Flathead Lake storage change
+ Noxon Rapids Res storage change

Pend Oreille Lake Inflow
+ Pend Oreille R at Newport, WA
+ Hungry Horse storage change
+ Flathead Lake storage change
+ Noxon Rapids storage change
+ Pend Oreille Lake storage change
+ Priest Lake storage change

Priest R nr Priest R
+ Priest Lake storage change

NF Coeur d'Alene R at Enaville - no corrections

St. Joe R at Calder- no corrections

Spokane R nr Post Falls
+ Coeur d'Alene Lake storage change

Spokane R at Long Lake, WA
+ Coeur d'Alene Lake storage change
+ Long Lake, WA storage change

Clearwater River Basin

Selway R nr Lowell - no corrections

Lochsa R nr Lowell - no corrections

Dworshak Res Inflow
+ Clearwater R nr Peck
- Clearwater R at Orofino
+ Dworshak Res storage change

Clearwater R at Orofino - no corrections

Clearwater R at Spalding
+ Dworshak Res storage change

Salmon River Basin

Salmon R at Salmon - no corrections

Lemhi R nr Lemhi – no corrections

MF Salmon R at MF Lodge – no corrections

SF Salmon R nr Krassel Ranger Station – no corrections

Johnson Creek at Yellow pine – no corrections

Salmon R at White Bird - no corrections

Weiser, Payette, Boise River Basins

Weiser R nr Weiser - no corrections

SF Payette R at Lowman - no corrections

Deadwood Res Inflow
+ Deadwood R bl Deadwood Res nr Lowman
+ Deadwood Res storage change

Lake Fork Payette R nr McCall – no corrections

NF Payette R at Cascade
+ Cascade Res storage change
+ Payette Lake storage change

NF Payette R nr Banks
+ Cascade Res storage change
+ Payette Lake storage change

Payette R nr Horseshoe Bend
+ Cascade Res storage change
+ Deadwood Res storage change
+ Payette Lake storage change

Boise R nr Twin Springs - no corrections

SF Boise R at Anderson Ranch Dam
+ Anderson Ranch Res storage change

Mores Ck nr Arrowrock Dam – no corrections

Boise R nr Boise
+ Anderson Ranch Res storage change
+ Arrowrock Res storage change
+ Lucky Peak Res storage change

Wood and Lost River Basins

Big Wood R at Hailey - no corrections

Big Wood R ab Magic Res
+ Big Wood R at Stanton Crossing nr Bellevue
+ Willow Ck

Camas Ck nr Blaine – no corrections

Big Wood R bl Magic Dam nr Richfield
+ Magic Res storage change

Little Wood R ab High Five Ck – no corrections

Little Wood R nr Carey
+ Little Wood Res storage change

Big Lost R at Howell Ranch - no corrections

Big Lost R bl Mackay Res nr Mackay
+ Mackay Res storage change

Little Lost R bl Wet Ck nr Howe - no corrections

Upper Snake River Basin

Henrys Fork nr Ashton
+ Henrys Lake storage change
+ Island Park Res storage change

Falls R nr Ashton
+ Grassy Lake storage change
+ Diversions from Falls R ab nr Ashton

Teton R nr Driggs - no corrections

Teton R nr St. Anthony
- Cross Cut Canal into Teton R
+ Sum of Diversions for Teton R ab St. Anthony
+ Teton Dam for water year 1976 only

Henrys Fork nr Rexburg
+ Henrys Lake storage change
+ Island Park Res storage change
+ Grassy Lake storage change
+ 7 Diversions from Henrys Fk btw Ashton to St. Anthony
+ 21 Diversions from Henrys Fk btw St. Anthony to Rexburg
+ 3 Diversions from Falls R ab Ashton
+ 6 Diversions from Falls R nr Ashton to Chester
Snake R nr Flagg Ranch, WY – no corrections
Snake R nr Moran, WY
+ Jackson Lake storage change
Pacific Ck at Moran, WY - no corrections
Buffalo Fork ab Lava nr Moran, WY - no corrections
Gros Ventre R at Kelly, WY - no corrections
Snake R ab Res nr Alpine, WY
+ Jackson Lake storage change
Greys R nr Alpine, WY - no corrections
Salt R R nr Etna, WY - no corrections
Snake R nr Irwin
+ Jackson Lake storage change
+ Palisades Res storage change
Snake R nr Heise
+ Jackson Lake storage change
+ Palisades Res storage change
Willow Ck nr Ririe
+ Ririe Res storage change
The forecasted natural volume for Willow Creek nr Ririe does not include an adjustment for Grays Lake water diverted from Willow Creek drainage through the Clarks Cut diversion and into Blackfoot Reservoir.
Blackfoot R ab Res nr Henry
+ Blackfoot Res storage change
The forecasted Blackfoot Reservoir Inflow includes Grays Lake water diverted from the Willow Creek drainage through the Clarks Cut diversion and into Blackfoot Reservoir.
Portneuf R at Topaz - no corrections
Snake R at Neeley
+ Jackson Lake storage change
+ Palisades Res storage change
+ American Falls storage change
+ Teton Dam for water year 1976 only

Southside Snake River Basins
Goose Ck nr Oakley - no adjustments
Trapper Ck nr Oakley - no adjustments
Oakley Res Inflow - *flow does not include Birch Creek*
+ Goose Ck
+ Trapper Ck
Salmon Falls Ck nr San Jacinto, NV - no corrections
Bruneau R nr Hot Springs - no corrections
Reynolds Ck at Tollgate - no corrections
Owyhee R nr Gold Ck, NV
+ Wildhorse Res storage change
Owyhee R nr Rome, OR – no Corrections
Owyhee R bl Owyhee Dam, OR
+ Owyhee Res storage change
+ Diversions to North and South Canals

Bear River Basin
Bear R nr UT-WY Stateline, UT- no corrections
Bear R abv Res nr Woodruff, UT- no corrections
Big Ck nr Randolph, UT - no corrections
Smiths Fork nr Border, WY - no corrections
Bear R bl Stewart Dam nr Montpelier
+ Bear R bl Stewart Dam
+ Rainbow Inlet Canal
Little Bear R at Paradise, UT - no corrections
Logan R nr Logan, UT - no corrections
Blacksmith Fk nr Hyrum, UT - no corrections

Reservoir Capacity Definitions (Units in 1,000 Acre-Feet, KAF)
Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. This table lists these volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS repo usable storage, which includes active and inactive storage. **(Revised Dec 2011)**

Basin/ Reservoir	Dead Storage	Inactive Storage	Active Storage	Surcharge Storage	NRCS Capacity	NRCS Capacity Includes
Panhandle Region						
Hungry Horse	39.73	---	3451.00	---	3451.0	Active
Flathead Lake	Unknown	---	1791.00	---	1791.0	Active
Noxon Rapids	Unknown	---	335.00	---	335.0	Active
Pend Oreille	406.20	112.40	1042.70	---	1561.3	Dead + Inactive + Active
Coeur d'Alene	Unknown	13.50	225.00	---	238.5	Inactive + Active
Priest Lake	20.00	28.00	71.30	---	119.3	Dead + Inactive + Active
Clearwater Basin						
Dworshak	Unknown	1452.00	2016.00	---	3468.0	Inactive + Active
Weiser/Boise/Payette Basins						
Mann Creek	1.61	0.24	11.10	---	11.1	Active
Cascade	Unknown	46.70	646.50	---	693.2	Inactive + Active
Deadwood	Unknown	---	161.90	---	161.9	Active
Anderson Ranch	24.90	37.00	413.10	---	450.1	Inactive + Active
Arrowrock	Unknown	---	272.20	---	272.2	Active
Lucky Peak	Unknown	28.80	264.40	13.80	293.2	Inactive + Active
Lake Lowell	7.90	5.80	159.40	---	165.2	Inactive + Active
Wood/Lost Basins						
Magic	Unknown	---	191.50	---	191.5	Active
Little Wood	Unknown	---	30.00	---	30.0	Active
Mackay	0.13	---	44.37	---	44.4	Active
Upper Snake Basin						
Henrys Lake	Unknown	---	90.40	---	90.4	Active
Island Park	0.40	---	127.30	7.90	135.2	Active + Surcharge
Grassy Lake	Unknown	---	15.18	---	15.2	Active
Jackson Lake	Unknown	---	847.00	---	847.0	Active
Palisades	44.10	155.50	1200.00	---	1400.0	Dead + Inactive+Active
Ririe	4.00	6.00	80.54	10.00	80.5	Active
Blackfoot	Unknown	---	348.73	---	348.7	Active
American Falls	Unknown	---	1672.60	---	1672.6	Active
Southside Snake Basins						
Oakley	0.00	---	75.60	---	75.6	Active
Salmon Falls	48.00	5.00	182.65	---	182.6	Active + Inactive
Wildhorse	Unknown	---	71.50	---	71.5	Active
Owyhee	406.83	---	715.00	---	715.0	Active
Brownlee	0.45	444.70	975.30	---	1420.0	Inactive + Active
Bear River Basin						
Bear Lake	5000.00	119.00	1302.00	---	1421.0 includes 119	Active + Inactive: that can be released
Montpelier Creek	0.21	---	3.84	---	4.0	Dead + Active

Interpreting Water Supply Forecasts

Introduction
Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

90 Percent Chance of Exceedance Forecast. There is a 90 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 10 percent chance that the actual streamflow volume will be less than this forecast value.

70 Percent Chance of Exceedance Forecast. There is a 70 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 30 percent chance that the actual streamflow volume will be less than this forecast value.

50 Percent Chance of Exceedance Forecast. There is a 50 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 50 percent chance that the actual streamflow volume will be less than this forecast value. Generally, this forecast is the middle of the range of possible streamflow volumes that can be produced given current conditions.

30 Percent Chance of Exceedance Forecast. There is a 30 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 70 percent chance that the actual streamflow volume will be less than this forecast value.

10 Percent Chance of Exceedance Forecast. There is a 10 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 90 percent chance that the actual streamflow volume will be less than this forecast value.

*Note: There is still a 20 percent chance that actual streamflow volumes will fall either below the 90 percent exceedance forecast or above the 10 percent exceedance forecast.

These forecasts represent the uncertainty inherent in making streamflow predictions. This uncertainty may include sources such as: unknown future weather conditions, uncertainties associated with the various prediction methodologies, and the spatial coverage of the data network in a given basin.

30-Year Average. The 30-year average streamflow for each forecast period is provided for comparison. The average is based on data from 1971-2000. The % AVG. column compares the 50% chance of exceedance forecast to the 30-year average streamflow; values above 100% denote when the 50% chance of exceedance forecast would be greater than the 30-year average streamflow.

AF - Acre-feet, forecasted volume of water are typically in thousands of acre-feet.

These forecasts are given to users to help make risk-based decisions. Users can select the forecast corresponding to the level of risk they are willing to accept in order to minimize the negative impacts of having more or less water than planned for.

To Decrease the Chance of Having Less Water than Planned for
A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive less than this amount). To reduce the risk of having less water than planned for, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded such as the 90 or 70 percent exceedance forecasts.

To Decrease the Chance of Having More Water than Planned for
A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive more than this amount). To reduce the risk of having more water than planned for, users can base their operational decisions on one of the forecasts with a lesser chance of being exceeded such as the 30 or 10 percent exceedance forecasts.

Using the forecasts - an Example
Using the 50 Percent Exceedance Forecast. Using the example forecasts shown below, there is a 50% chance that actual streamflow volume at the Boise River near Twin Springs will be less than 685 KAF between April 1 and July 31. There is also a 50% chance that actual streamflow volume will be greater than 685 KAF.

Using the 90 and 70 Percent Exceedance Forecasts. If an unexpected shortage of water could cause problems (such as irrigated agriculture), users might want to plan on receiving 610 KAF (from the 70 percent exceedance forecast). There is a 30% chance of receiving *less* than 610 KAF.

Alternatively, if users determine the risk of using the 70 percent exceedance forecast is too great, then they might plan on receiving 443 KAF (from the **90** percent exceedance forecast). There is 10% chance of receiving less than 443 KAF.

Using the 30 or 10 Percent Exceedance Forecasts. If an unexpected excess of water could cause problems (such as operating a flood control reservoir), users might plan on receiving 760 KAF (from the 30 percent exceedance forecast). There is a 30% chance of receiving *more* than 760 KAF.

Alternatively, if users determine the risk of using the 30 percent exceedance forecast is too great, then they might plan on receiving 927 KAF (from the 10 percent exceedance forecast). There is a 10% chance of receiving more than 927 KAF.

Users could also choose a volume in between any of these values to reflect their desired risk level.

Weiser, Payette, Boise River Basins
Streamflow Forecasts – January 2006

Forecast Point	Forecast Period	Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000 AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	690

*90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table

USDA Natural Resources Conservation Service
9173 West Barnes Drive, Suite C
Boise ID 83709-1574

OFFICIAL BUSINESS

Issued by
Jason Weller, Acting Chief
Natural Resources Conservation Service
Washington, DC

Released by
Jeff Burwell, State Conservationist
Rob Sampson, State Conservation Engineer
Natural Resources Conservation Service
Boise, Idaho

Prepared by
Idaho Snow Survey Staff
Ron Abramovich, Water Supply Specialist
Philip Morrisey, Data Collection Officer
Jeff Anderson, Hydrologist
Jeff Graham, Electronics Technician
Alex Rebentisch, Electronics Technician

Forecasts and Assistance provided by
Rashawn Tama, Forecast Hydrologist
Jolyne Lea, Forecast Hydrologist
NRCS, National Water and Climate Center, Portland, Oregon

Numerous other groups and agencies provide funding and/or cooperative support for the collection, operation and maintenance of the Cooperative Idaho Snow Survey Program. Their cooperation is greatly appreciated.